

# Conception and implementation of rich pedagogical scenarios through collaborative portals

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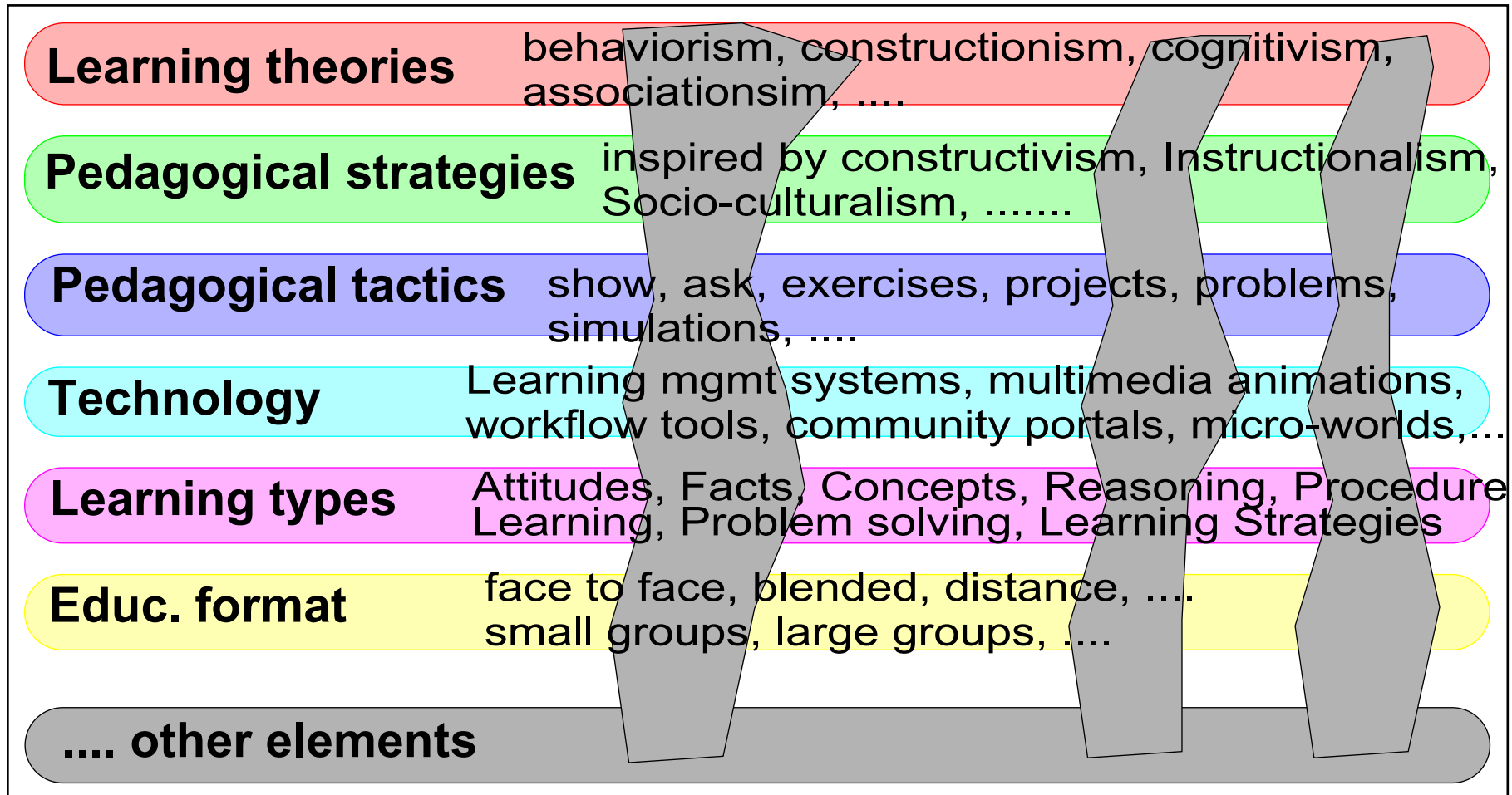
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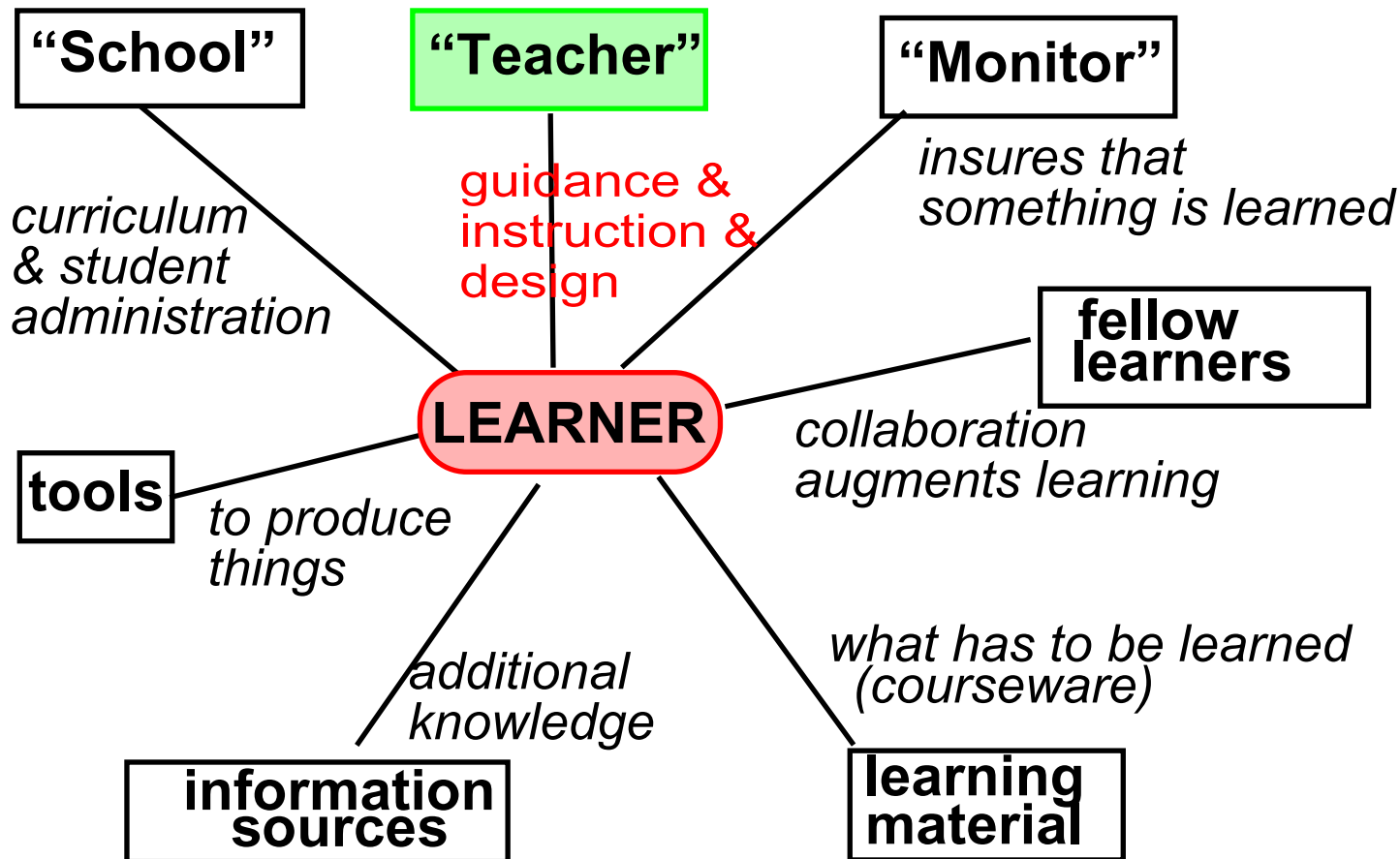
# 1. Rich pedagogical scenarios in context

## 1.1 Instructional design: many dimension, many combinations



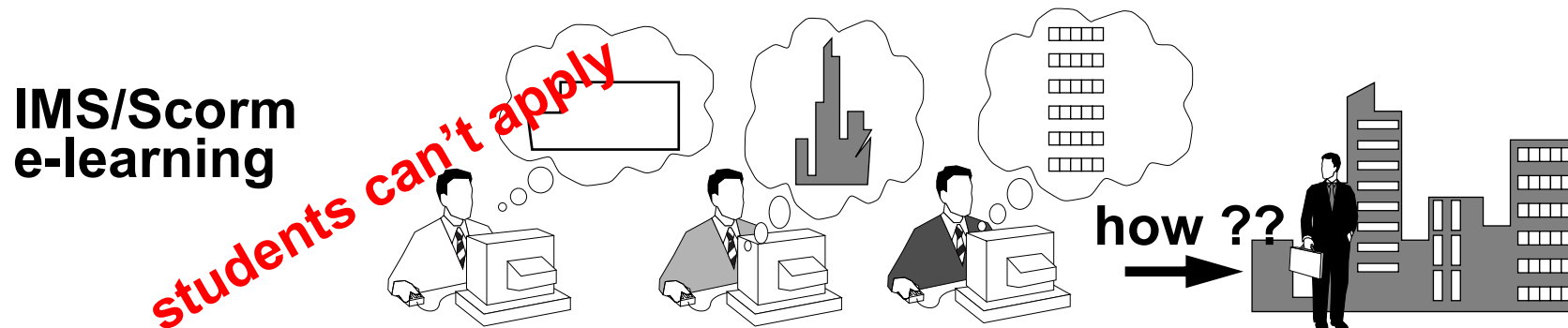
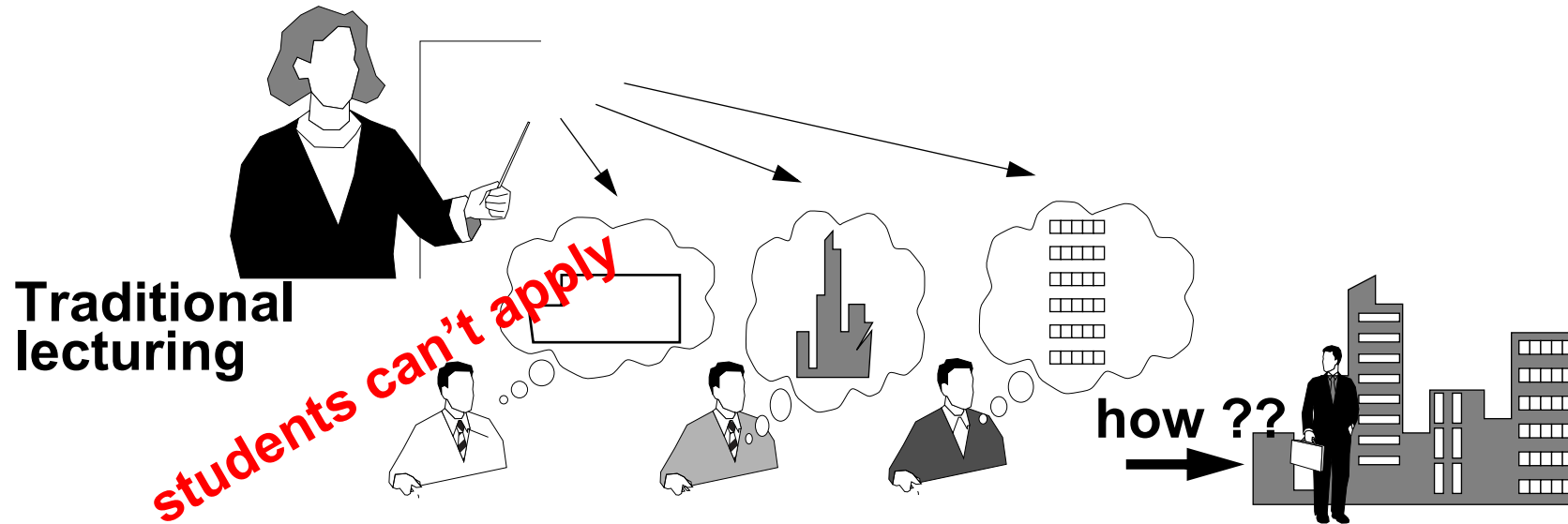
• I am just going to look at a **subset** of possible combinations !!!

## 1.2. Functions of a learning environment



- A learning environment has several functions
- Teacher role is **central** in "rich" activity-based designs (.....)

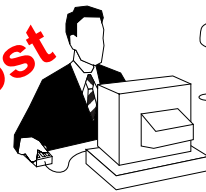
## 1.3. The problem with reproductive learning



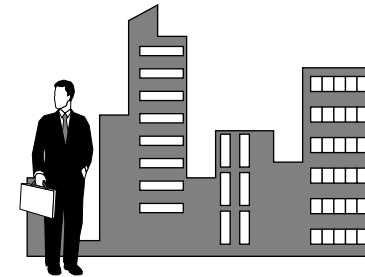
# 1.4. The problem with "let's do projects" answer

Traditional learning by projects

*students are lost*



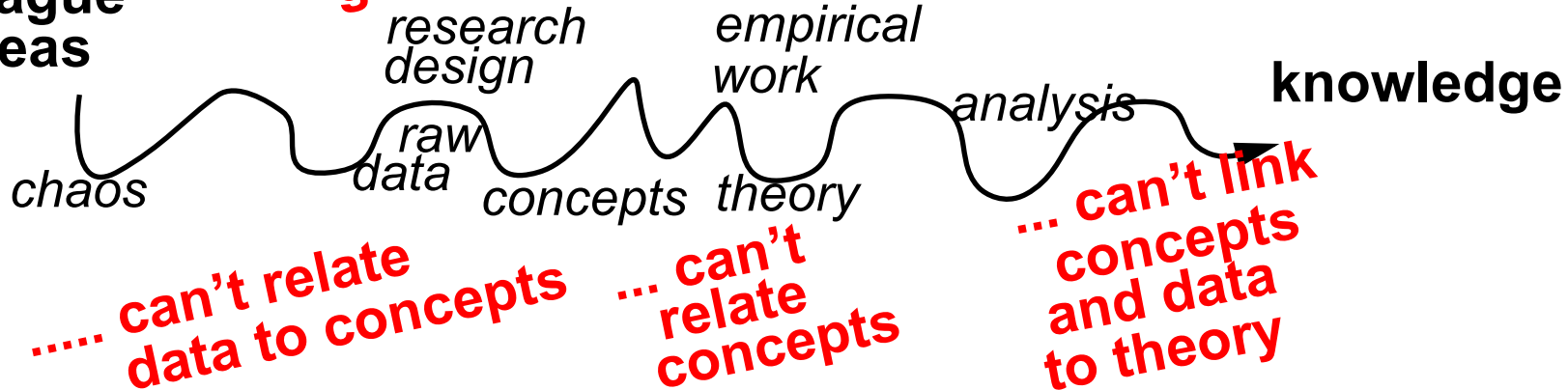
how ??



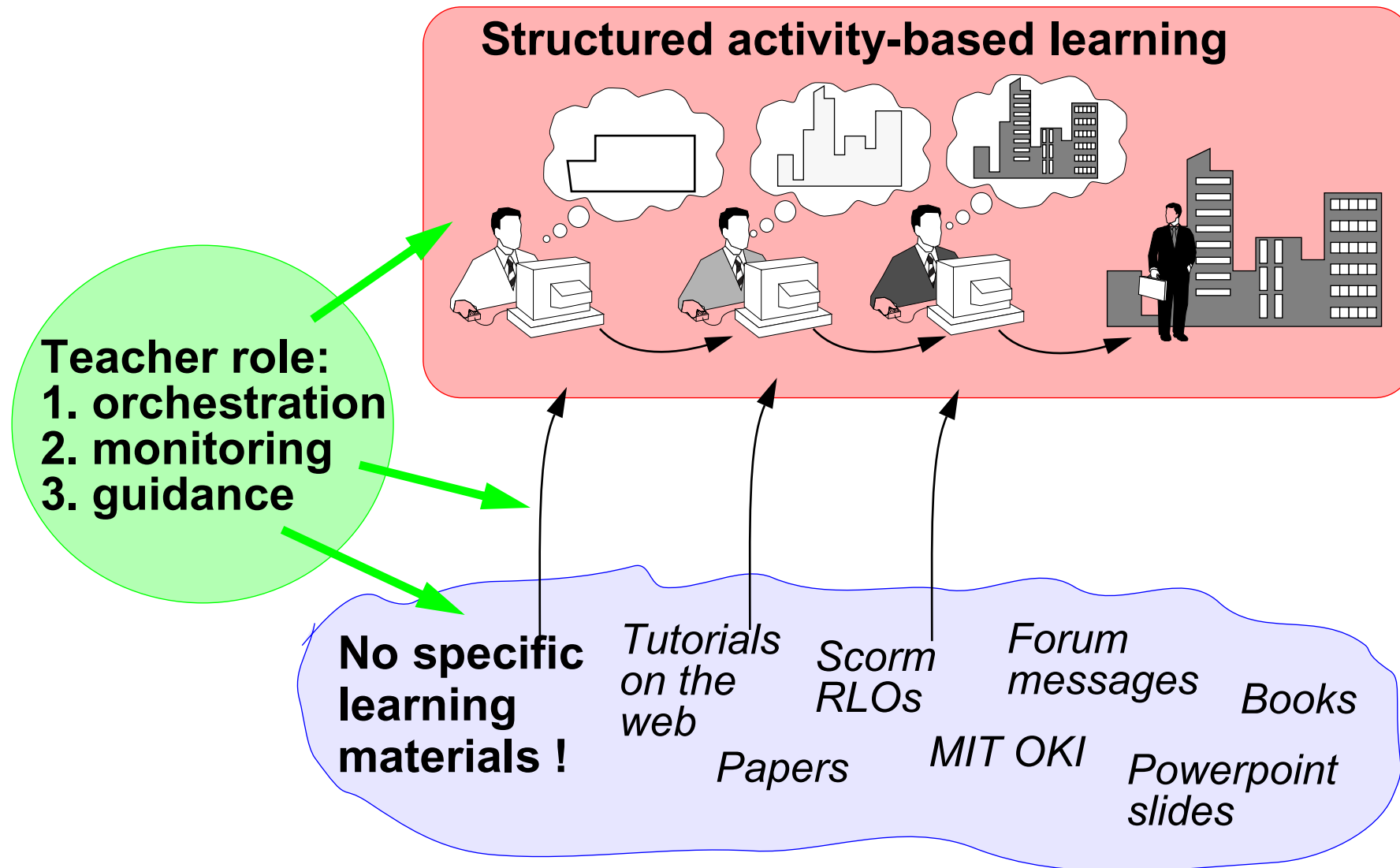
vague ideas

*students can't formulate goals*

*students have trouble with research designs*



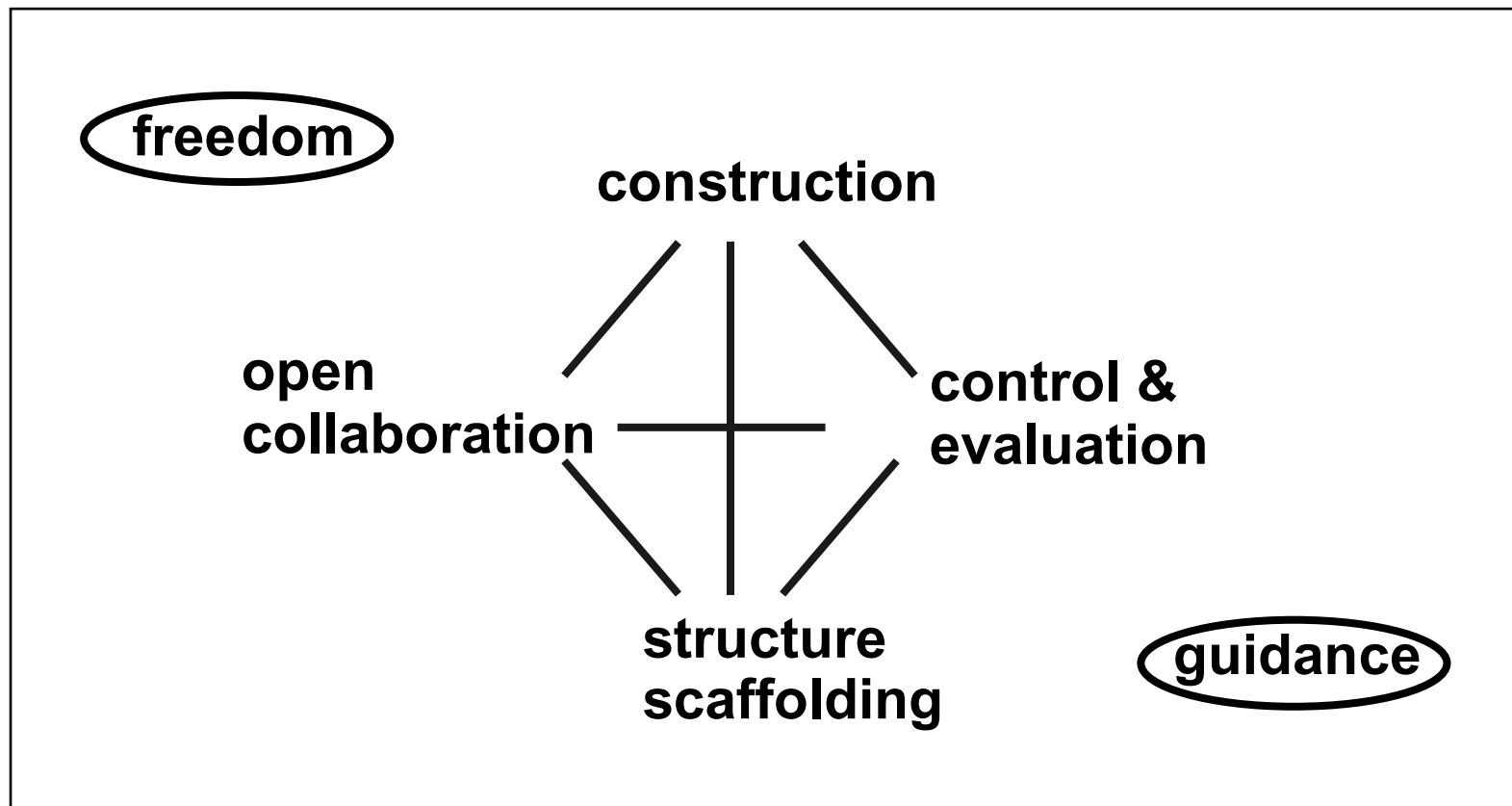
## 1.5.A possible solution (goal of this talk)



## 2. The architecture of structured activity-based learning

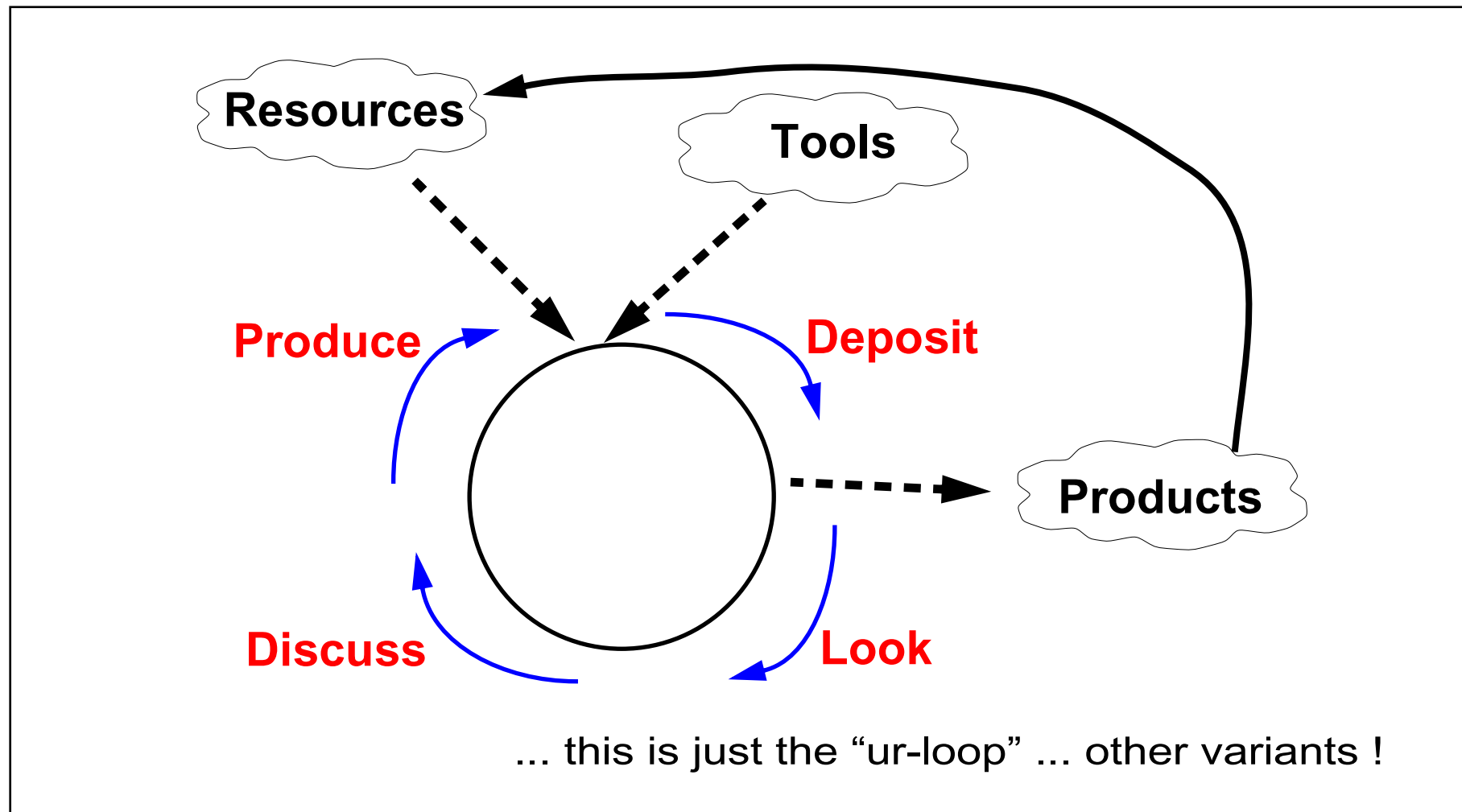
### 2.1 Structured socio-constructivist pedagogical scenarios

- Open ended & “rich” socio-constructivist designs are **more effective** if individuals and groups have to evolve within somewhat **specified scenarios**



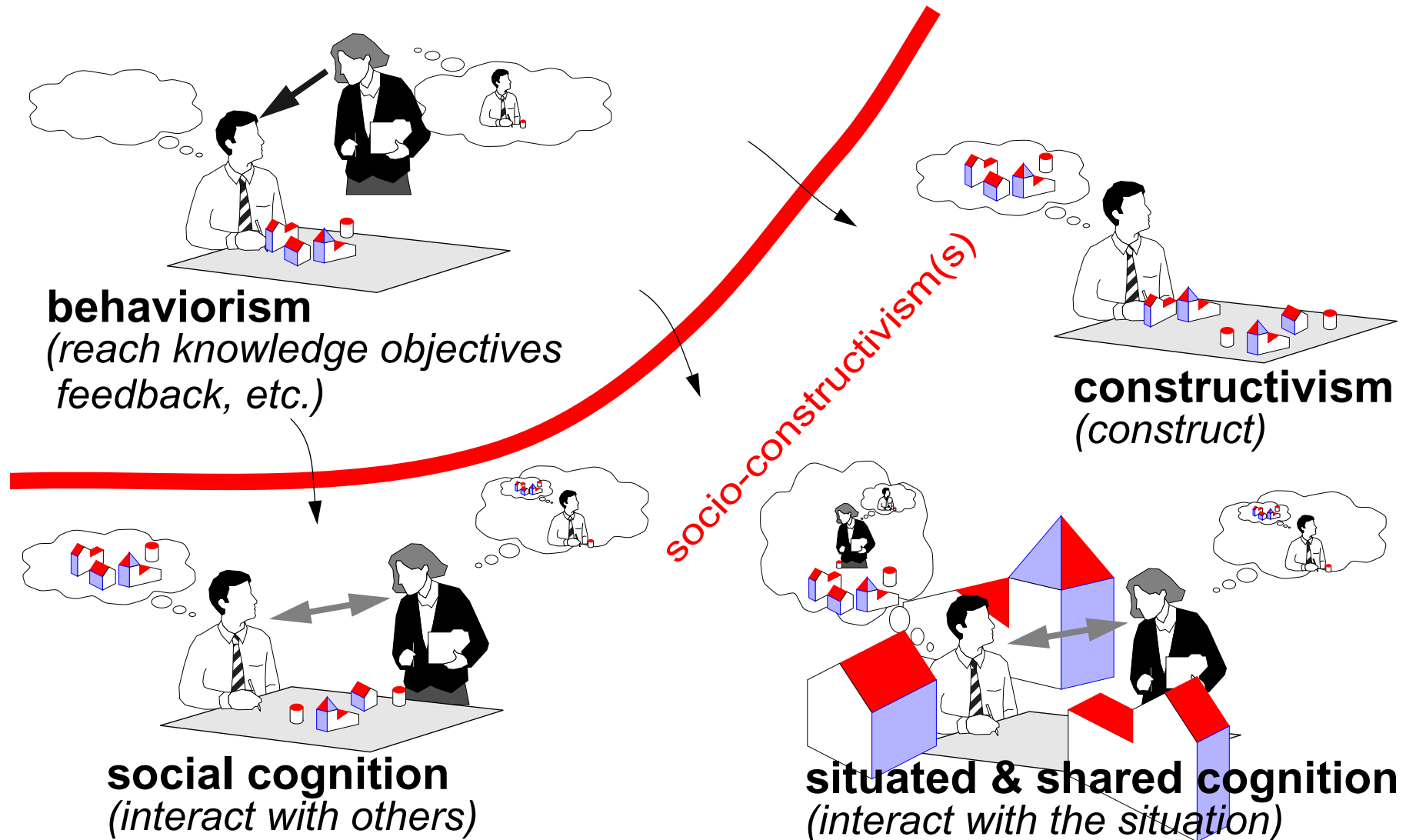


- Scenarios are **sequences of activity phases** within which group members **do tasks** and **play specific roles**
- This orchestration implies organizing **workflow loops**



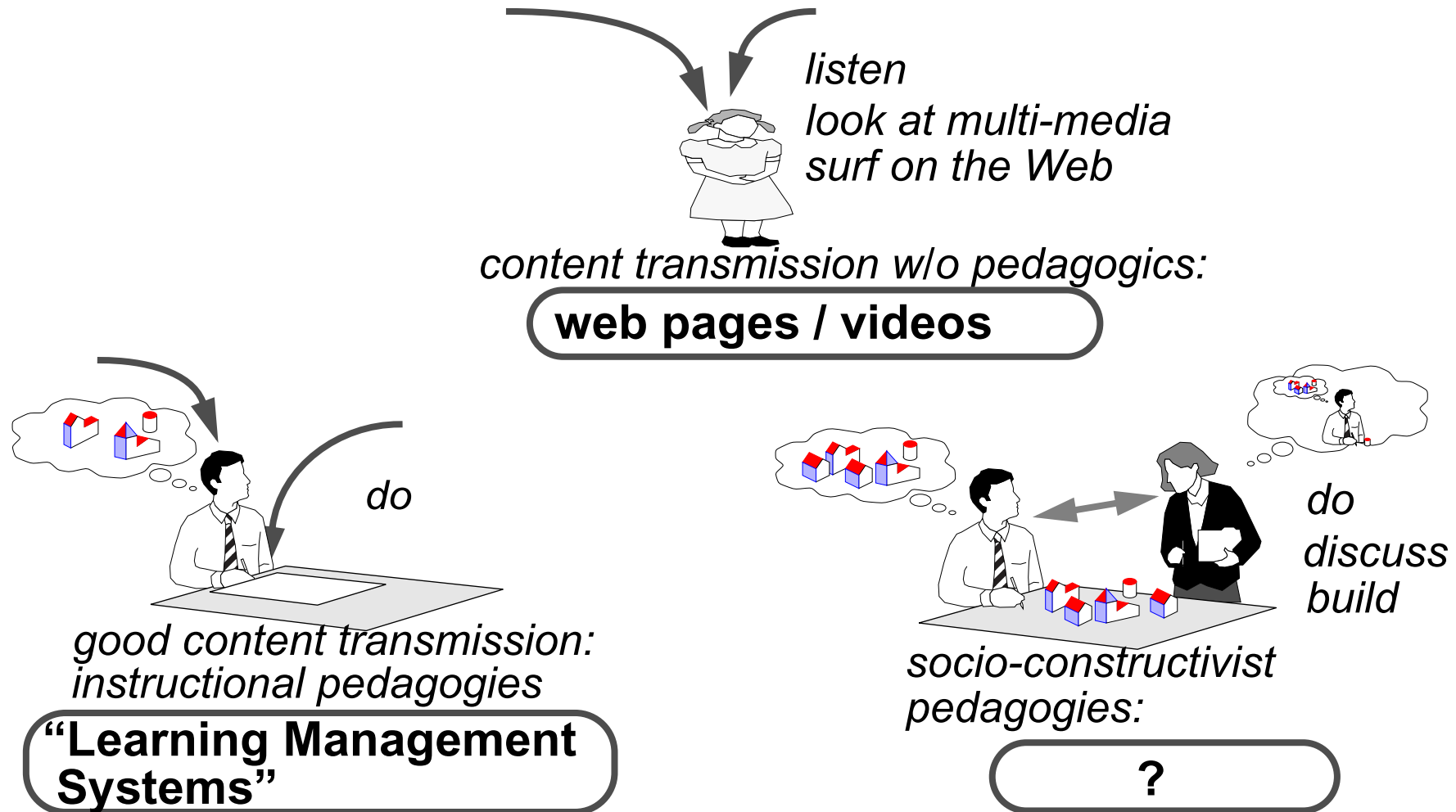
## 2.2.A Note on the theoretical foundations

### Socio-constructivist + a pinch of behaviorism

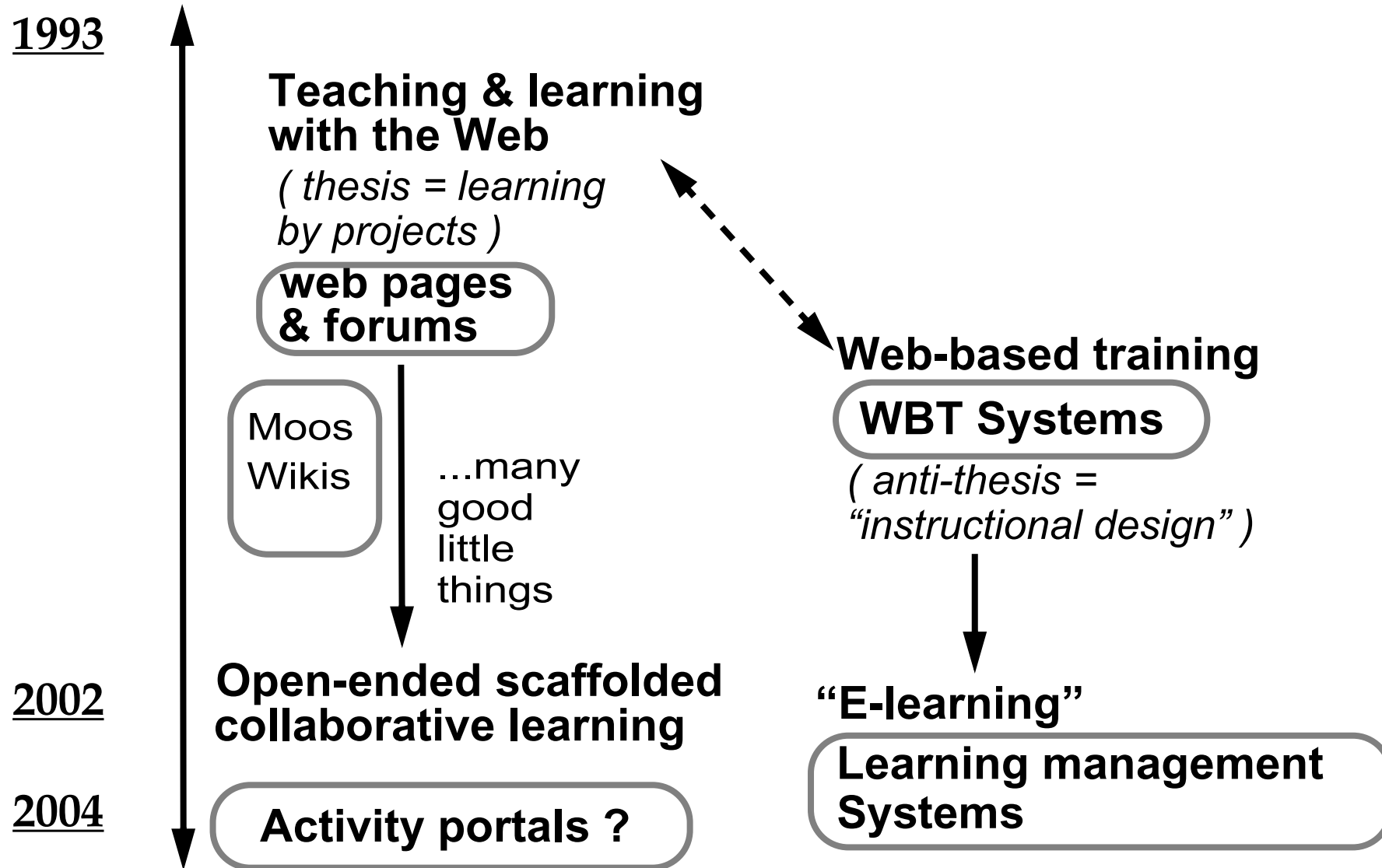


### 3. Available tools: past, present and future (?)

#### 3.1 We have got a curious situation

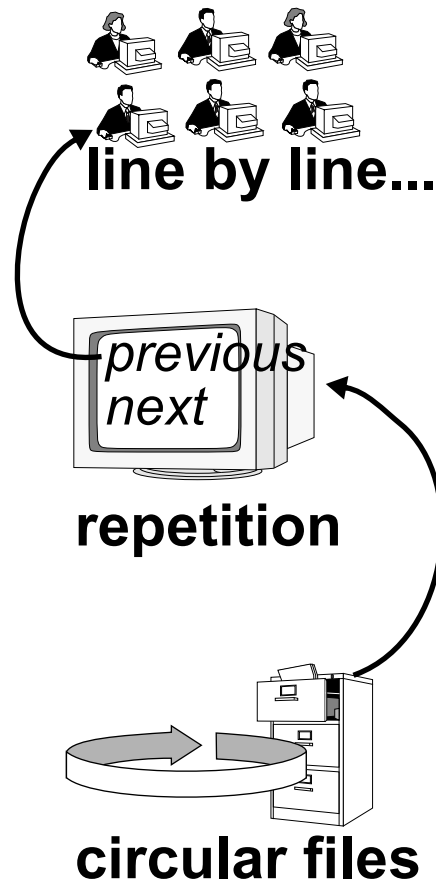


### 3.2.A short time-line of Internet in education



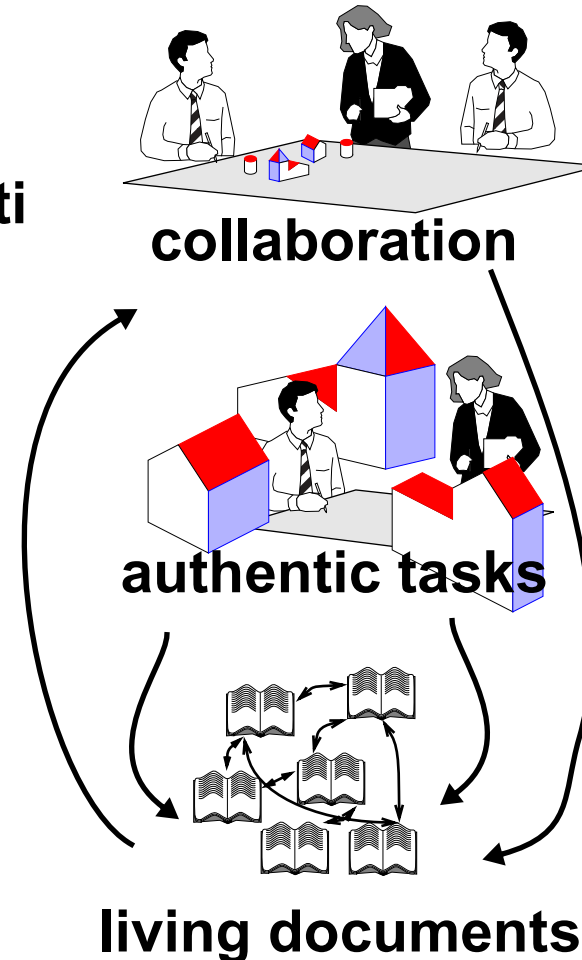
### 3.3 We need knowledge engines !

#### Transmissive pedagogies



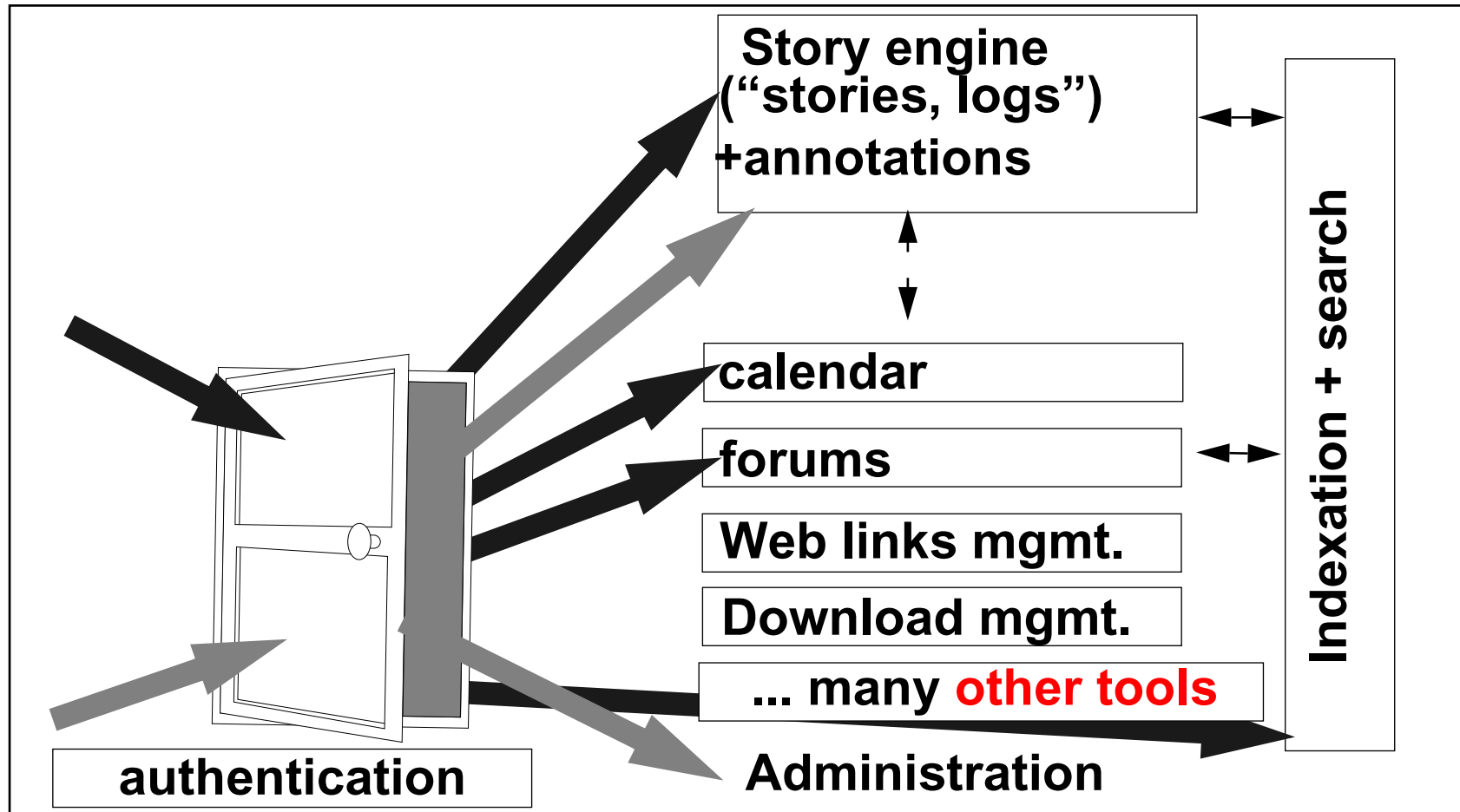
- the computer as **facilitating structure**, as thinking, working & communication tool
- Support of student and teacher **activities** leading to **new "contents"**

#### Activity-based pedagogics



### 3.4. Let's use C3MS Portals !

### **C**ommunity, **C**ontent, & **C**ollaboration **M**anagement **S**ystems



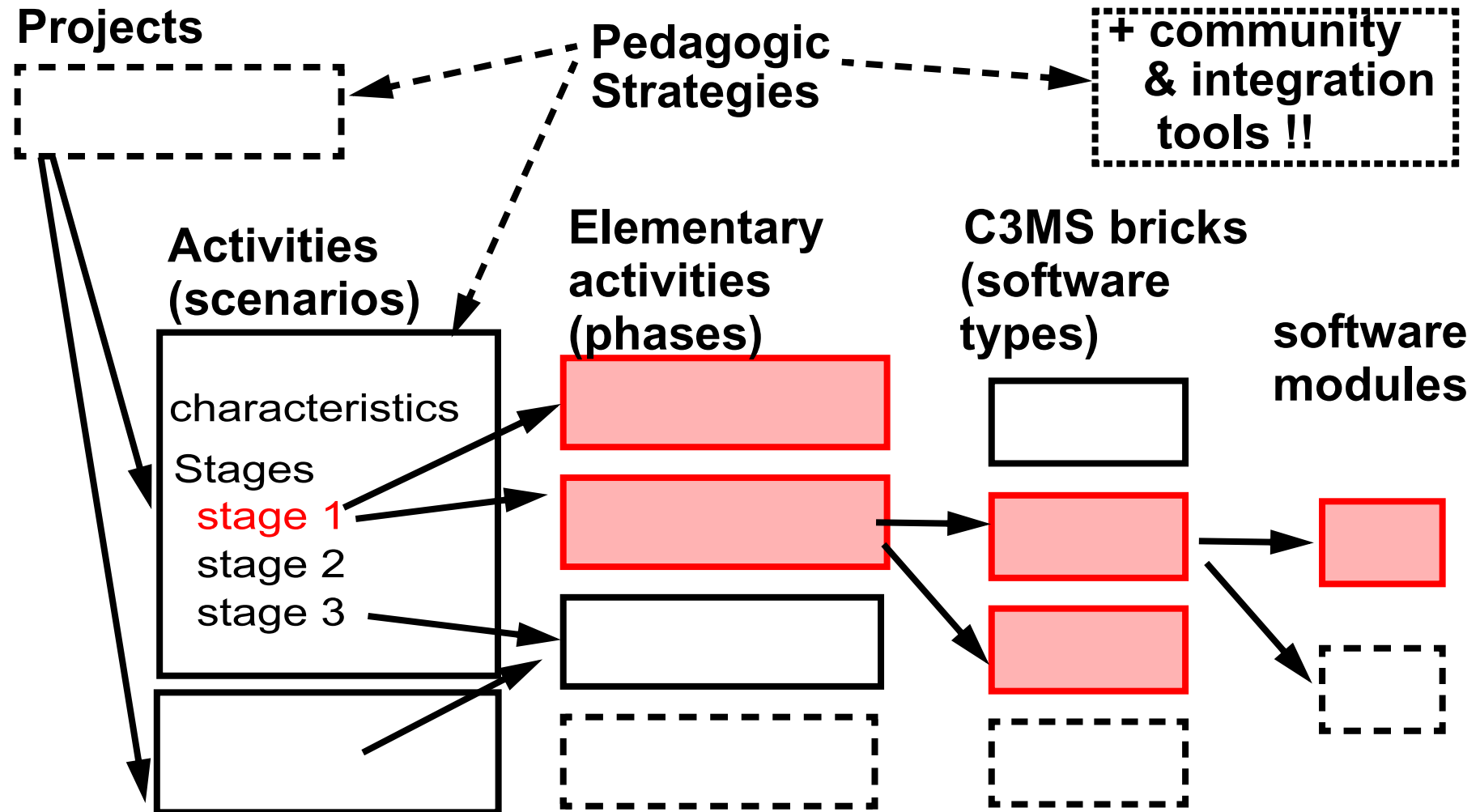
- Integration of most applications (authentication, interfaces,...)
- Plug-in architecture ! (**YOUR** organization can write modules)

**3.5.A good start: available C3MS bricks**

<b><i>Function</i></b>	<b><i>C3MS modules (tools of the portal)</i></b>
<b><i>Content management</i></b>	News engine (including a organization by topics and an annotation mechanism) - Content Management Systems (CMS) Collaborative hypertexts (Wikis) - Image albums (photos, drawings, etc.) - Glossary tool or similar - Individual weblogs (diaries)
<b><i>Knowledge exchange</i></b>	News syndication (headlines from other portals) File sharing (all CMS tools above)
<b><i>Exchange of arguments</i></b>	Forums and/or new engine Chats, .....
<b><i>Project support</i></b>	Project management modules, Calendars, .....
<b><i>Knowledge management</i></b>	FAQ manager - Links Manager ("Yahoo-like") Search by keywords for all contents "top 10" box, rating systems for comments "What's new" (forum messages, downloads, etc.), .....
<b><i>Community management</i></b>	Presence, profile and identification of members Shoutbox (mini-chat integrated into the portal page) Reputation system Activity tracing for members Event calendar News engine, .....

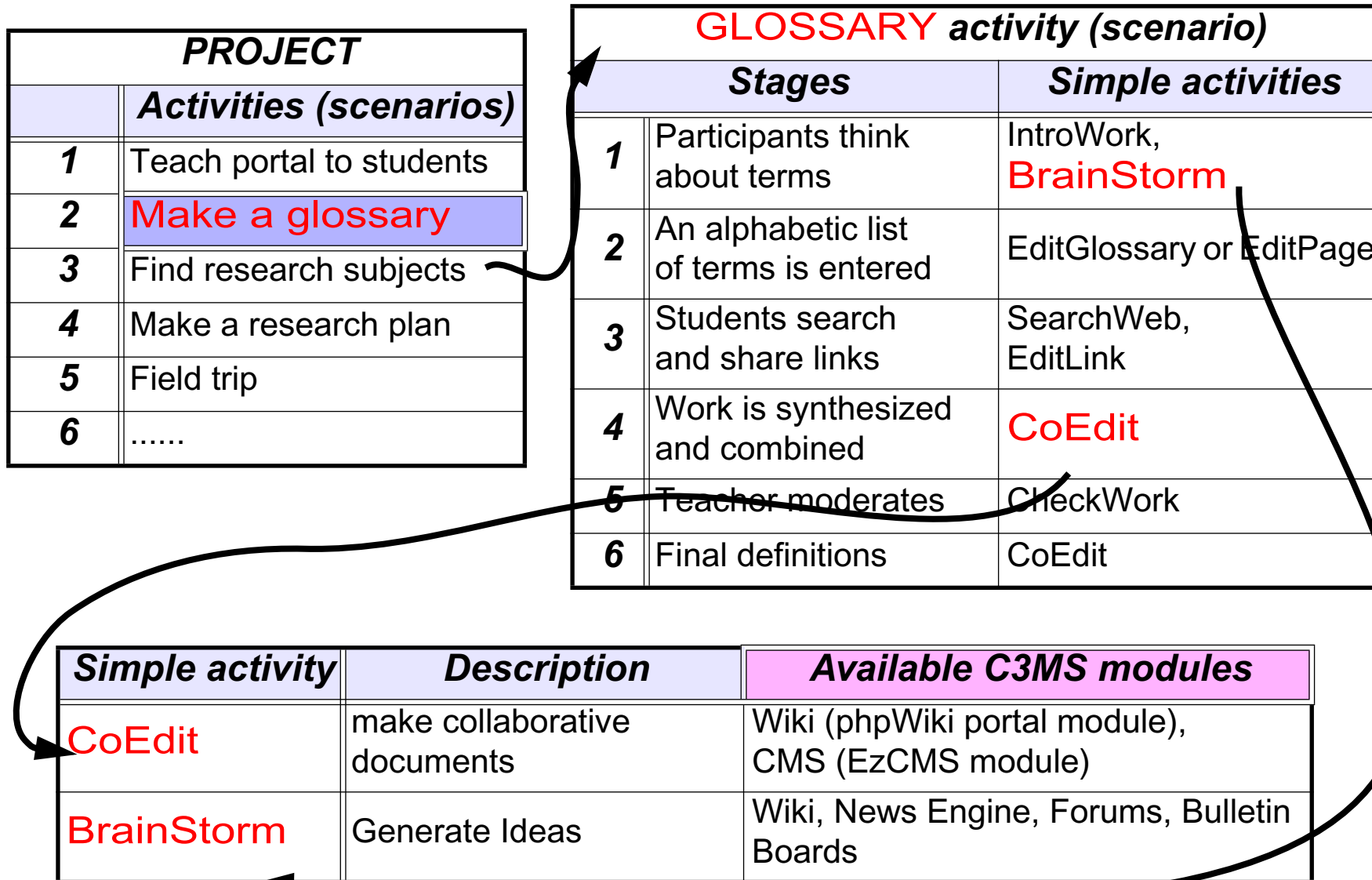
# 4. C3MS portals & educational scenario scripting

## 4.1 The global picture





## 4.2.Planning example: Study wildlife of Mauritius



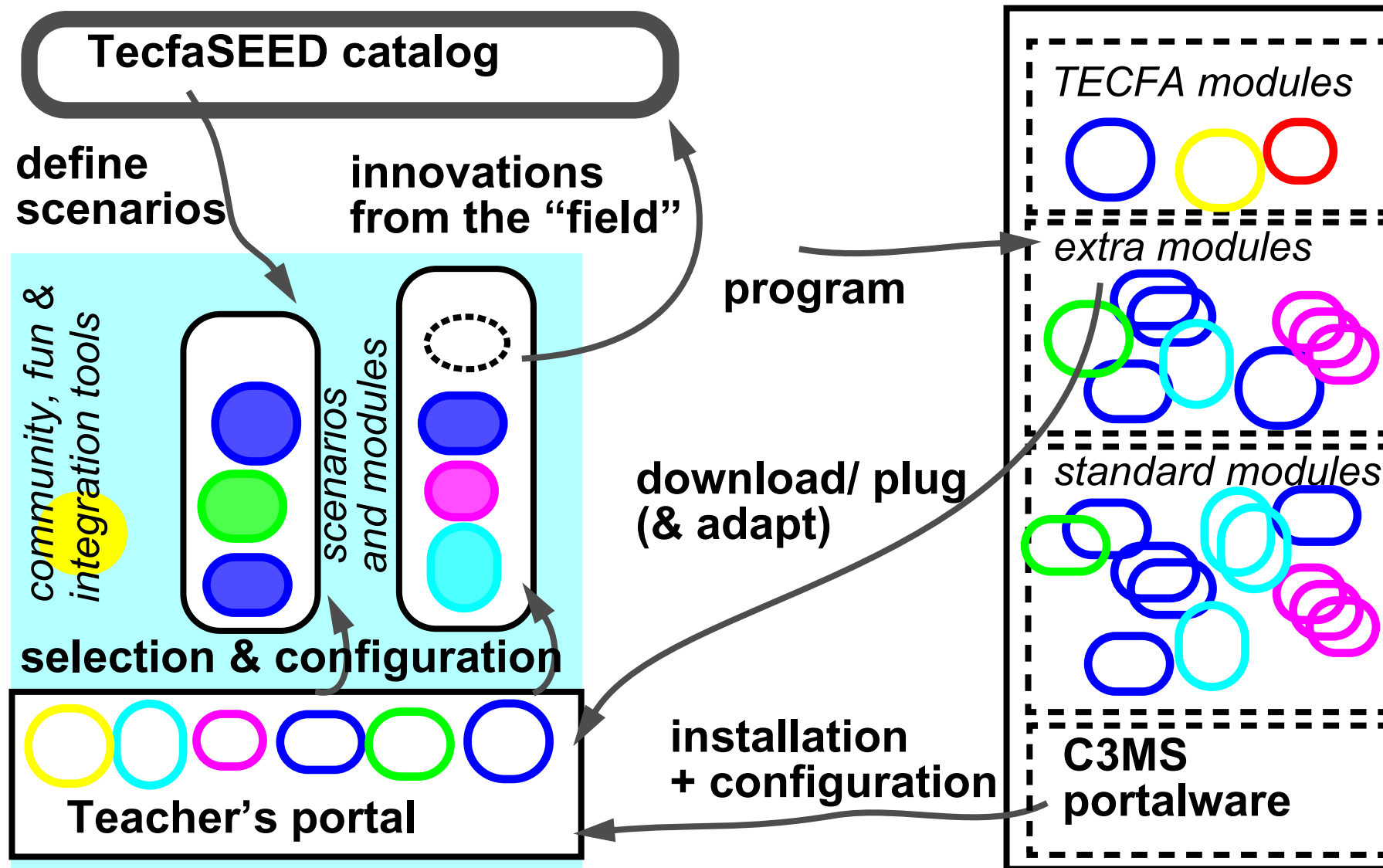
## Implementation example of the Glossary activity

( previous step: learn portal )

<b>Instantiated example “glossary” activity (activity 2)</b>			
<b>Stages</b>		<b>Tools</b>	<b>Instructions</b>
<b>1</b>	Suggest terms	Wiki (= coll. hypertext)	Each student must suggest 3 terms and enter them
<b>2</b>	Provisional list of terms	Wiki	Together in class we clean up the list
<b>3</b>	Search and sharing of results	Google, Links manager	Each student must provide 4 links and make comments to 2 other
<b>4</b>	Raw information is synthesized and combined	Wiki	Each student must enter 2 definitions, make links from “his” definitions to others and modify others
<b>5</b>	Teacher moderates	News engine	Teacher will give feedback in an article
<b>6</b>	Students produce final definitions	Wiki	Students can make final modifications

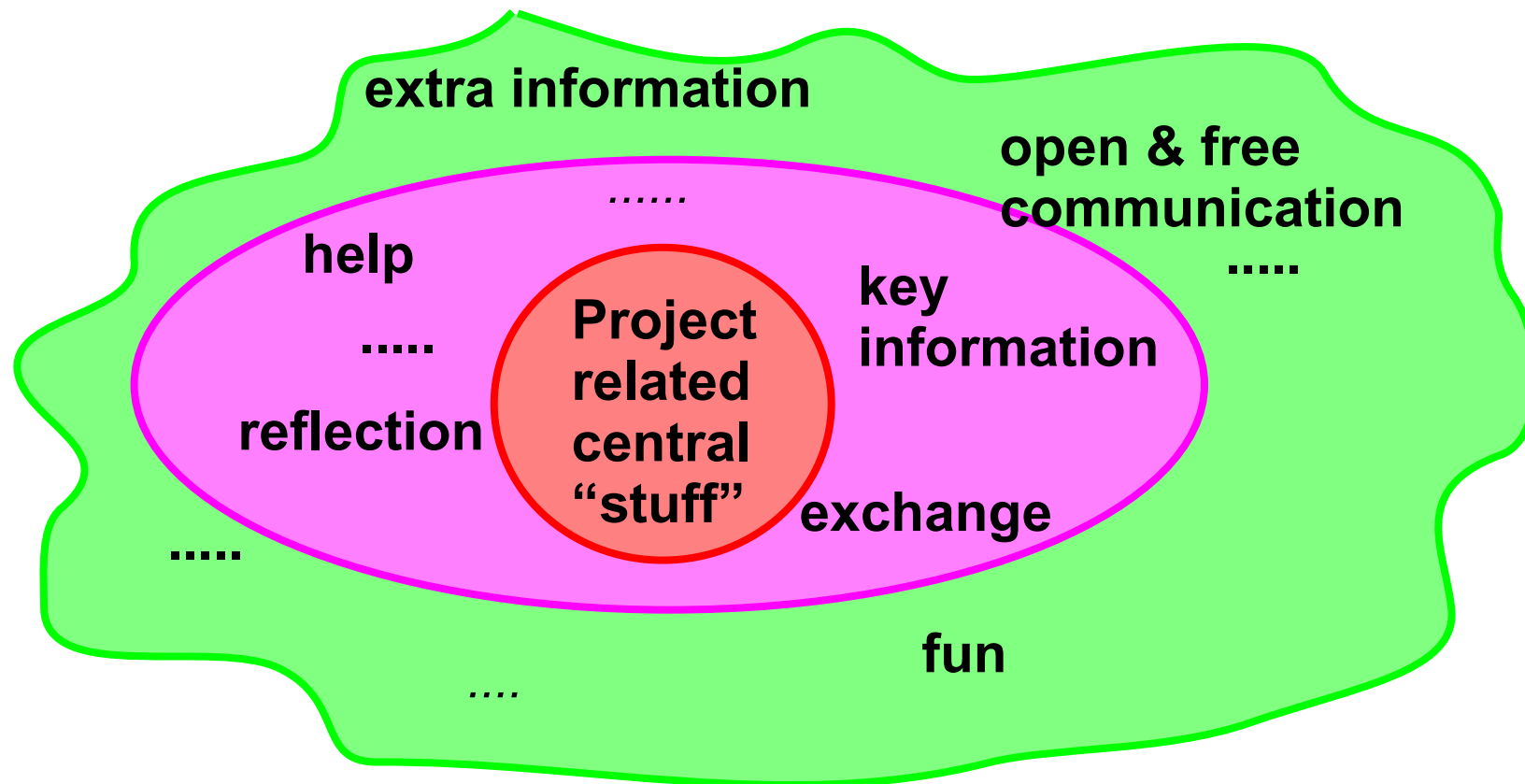
( next step: find research subjects )

### 4.3.Scenario configuration with C3MS bricks



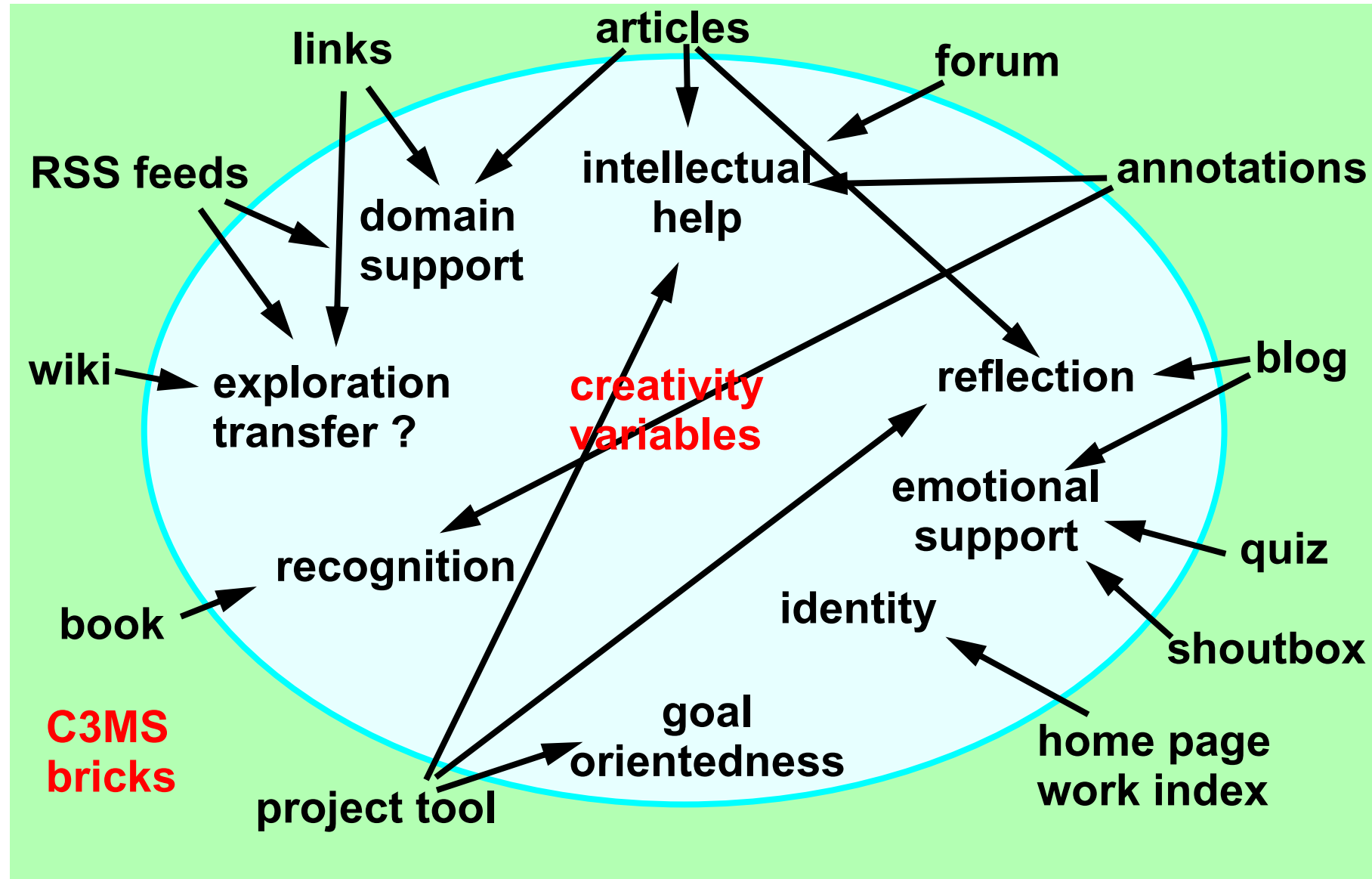
## 5. C3MS portals as learning environments

### 5.1 Two dimensions: sharp focus and fuzzy edges

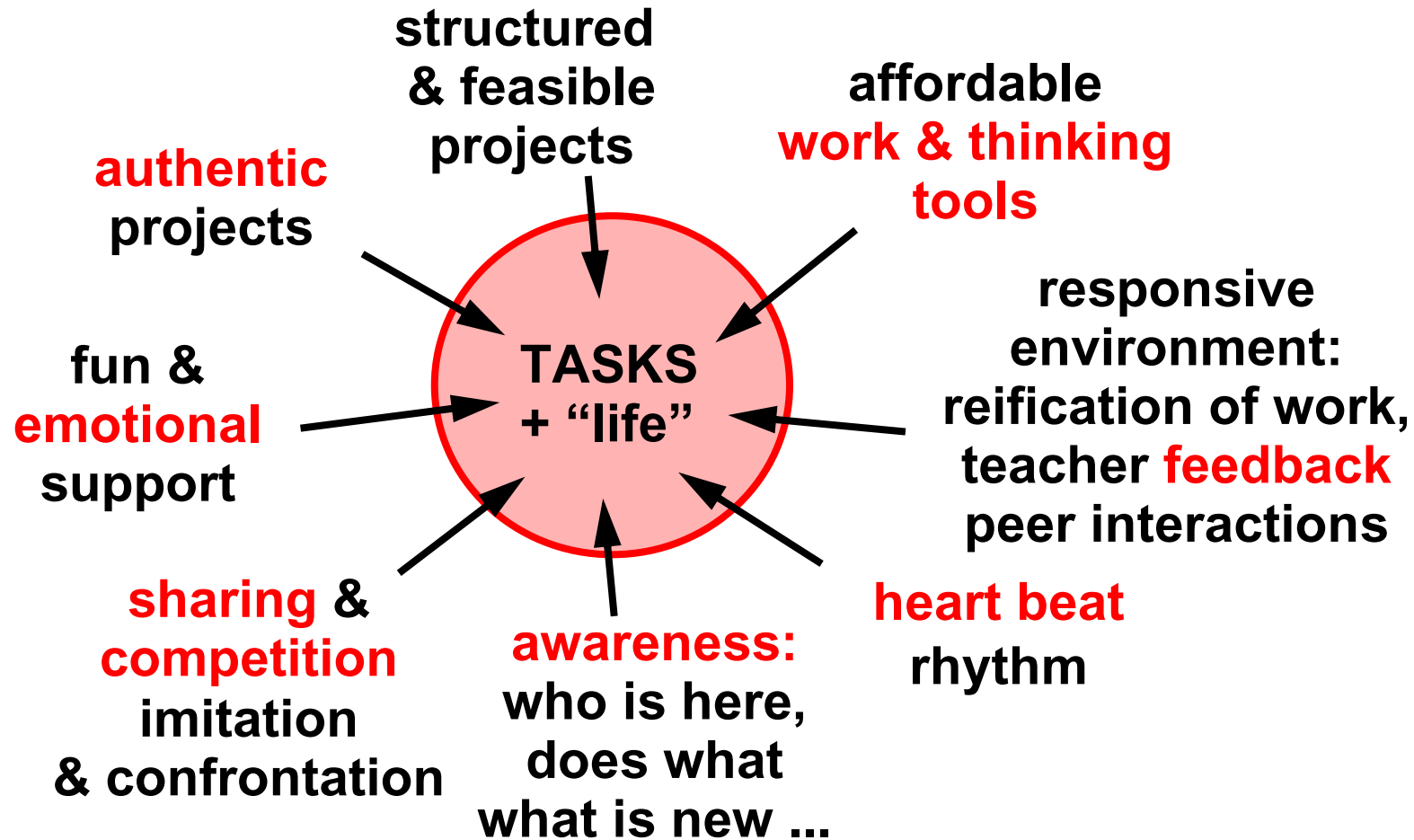


- **activities** (scenarios) and a "**place to be**" ! (virtual environment)

## 5.2.C3MS and support for creativity “elements”



## 5.3.LE design = landscaping & conditioning



## 6. First conclusions: Hey we are teacher-centric !



**Teacher as  
orchestrator**



**Teacher as  
monitor**



**Teacher as  
facilitator**

**designs the environment  
designs the global project  
designs flexible tasks**

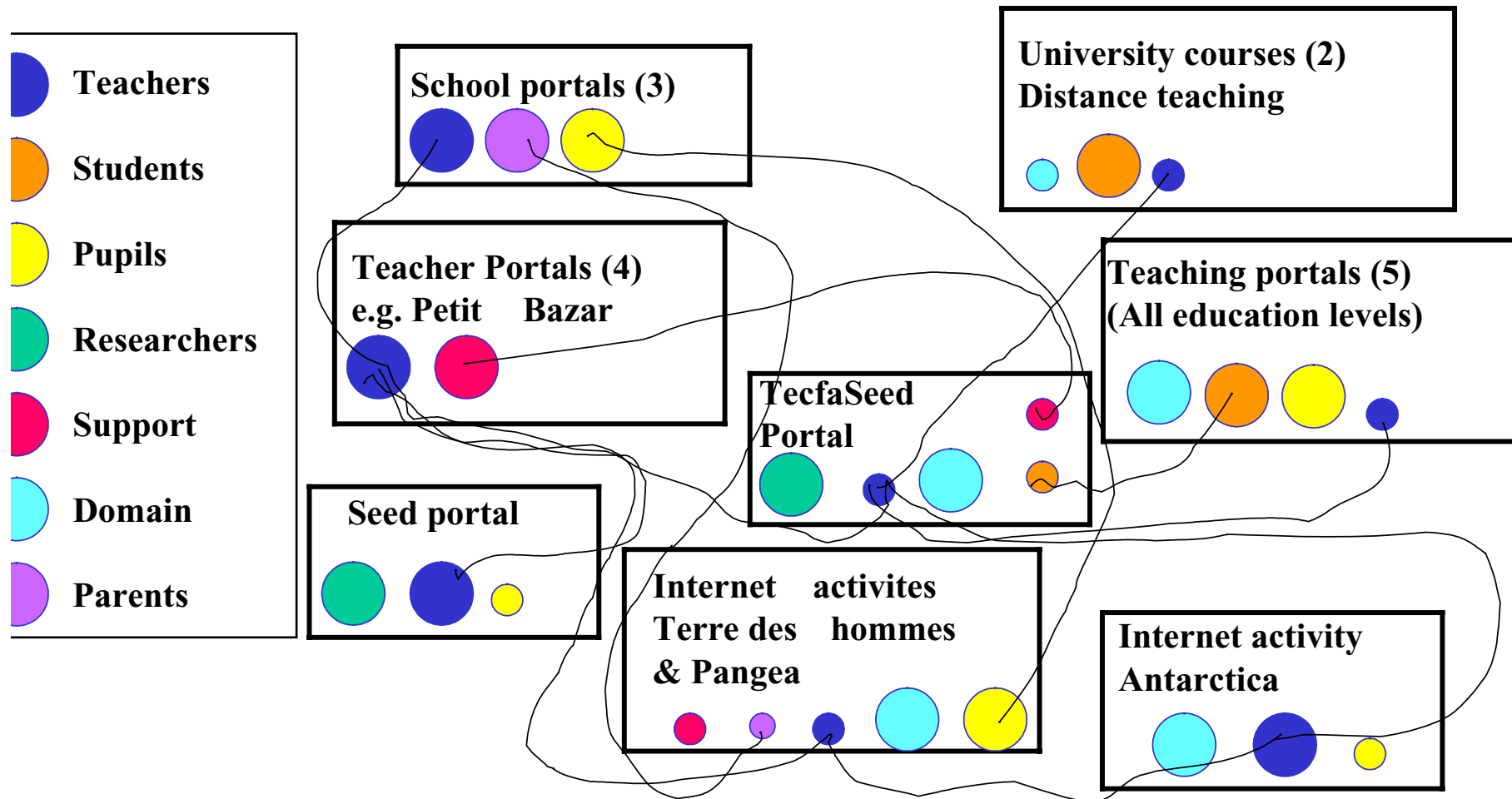
**makes audits  
reads blogs  
controls project plans  
evaluates**

**gives feedback  
answers questions  
writes tutorials  
makes examples  
provides links**

*..... (now try to do this without ICT!)*

# 7. A provisional account of our work

## 7.1 Portals everywhere !





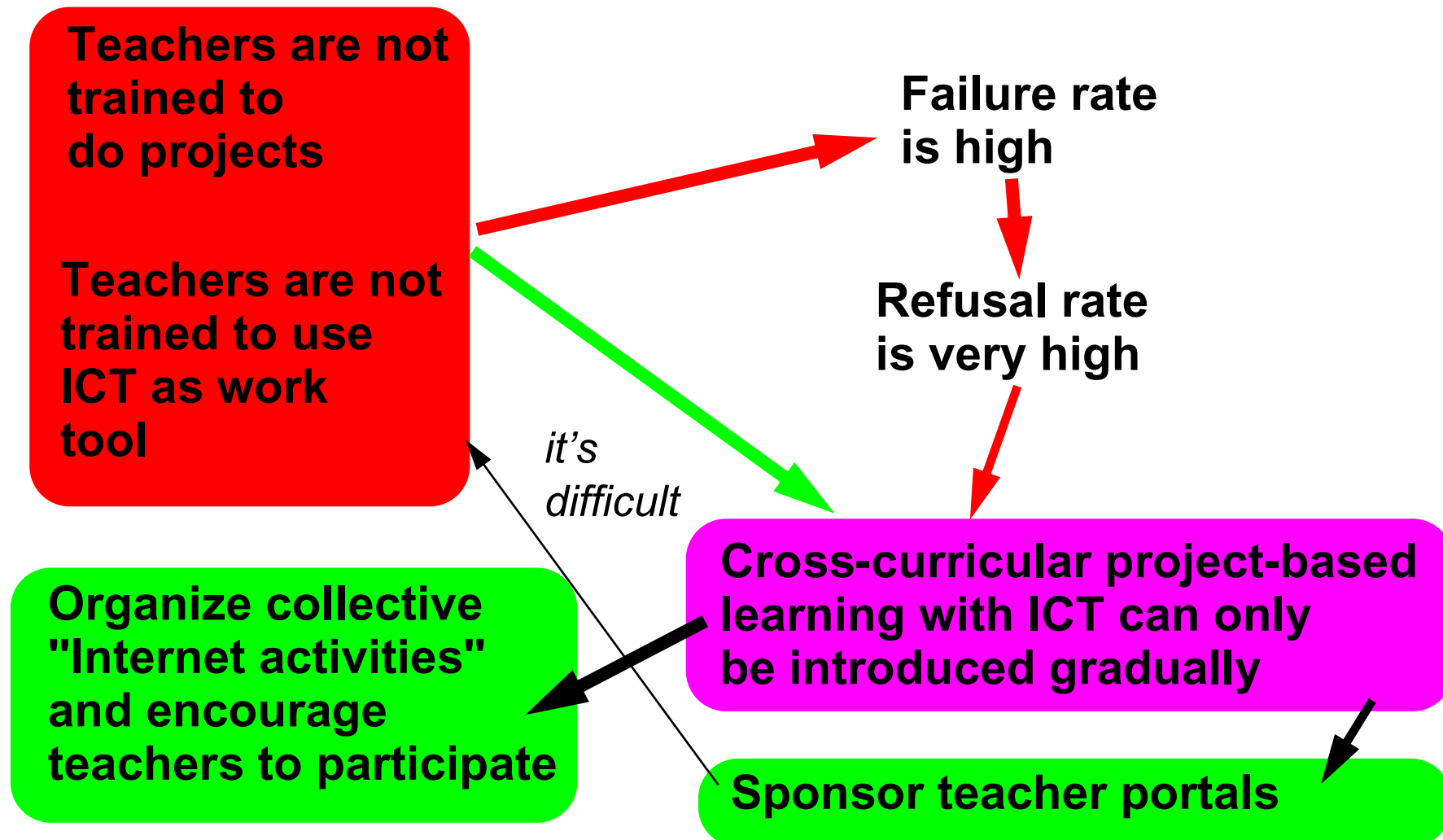
## 7.2. Problems and issues at school level (age 10 to 19)

<i>Object</i>	<i>Problems</i>	<i>Possible solutions</i>
<i>the portal concept</i>	<ul style="list-style-type: none"> <li>• teachers &amp; pupils are not <b>familiar</b></li> </ul>	<ul style="list-style-type: none"> <li>• train, introduce slowly (over 3 years min.)</li> <li>• force (@Tecfa)</li> <li>• install portals everywhere</li> <li>• host portals at Tecfa</li> </ul>
<i>scenarios</i>	<ul style="list-style-type: none"> <li>• teachers are <b>not used to create scenarios</b> with ICTs</li> </ul>	<ul style="list-style-type: none"> <li>• provide support</li> <li>• sponsor simple activities <u>and</u> more complex as option</li> <li>• provide catalogue, examples</li> </ul>
<i>scenarios</i>	in secondary schools: <ul style="list-style-type: none"> <li>• <b>no time</b></li> <li>• <b>curriculum</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>exploit opportunities in the curriculum</b></li> <li>• <b>transversal activities</b></li> </ul>

<i>Object</i>	<i>Problems</i>	<i>Possible solutions</i>
<i>Internet</i>	<ul style="list-style-type: none"> <li>• <b>fear</b> to “show”,</li> <li>• <b>lack</b> of “<b>Internet spirit</b>”</li> </ul>	<ul style="list-style-type: none"> <li>• sponsor virtual teacher communities with the same tool</li> <li>• give examples</li> </ul>
<i>the system</i>	<ul style="list-style-type: none"> <li>• censorship,</li> <li>• firewalls,</li> <li>• server politics,</li> <li>• <b>slowness</b>, incompetency &amp; nastiness ...</li> </ul>	<ul style="list-style-type: none"> <li>• contournement (provide hosting or private providers)</li> <li>• lobbying, etc.</li> <li>• training of all stakeholders (with integrated projects)</li> </ul>
<i>technology</i>	<ul style="list-style-type: none"> <li>• no <b>standards</b></li> <li>• too much “text”</li> <li>• no workflow</li> </ul>	<ul style="list-style-type: none"> <li>• “street standards” or Java/portlets or “webservices” ?</li> <li>• IMS/ “learning design” ?</li> <li>• add graphics (later)</li> </ul>

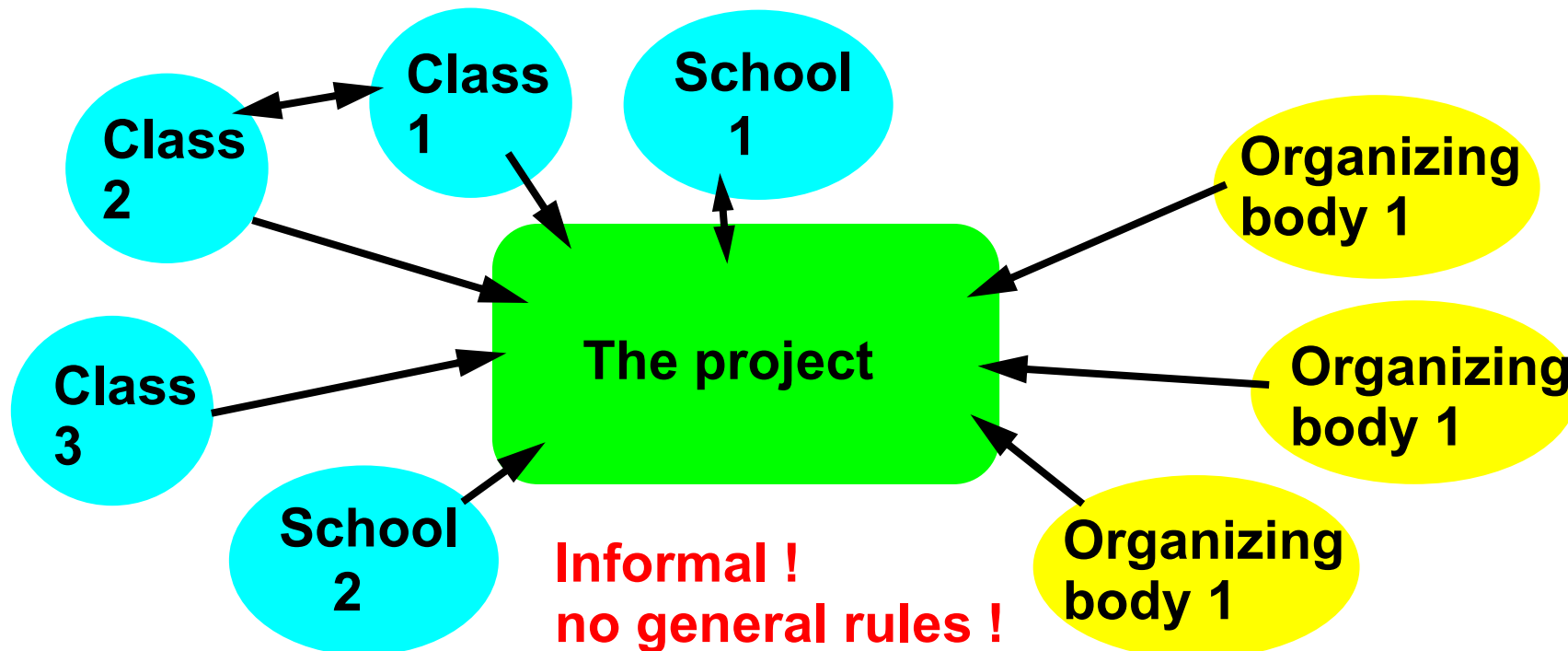
## 8. Case study I: Inter-class Internet activities

### 8.1 Recall of the situation (in central Europe)



## 8.2. So what are so called "Collective Internet activities" ?

- "Organized" by some consortium (usually with different stakeholders)
- Often an interdisciplinary topic
- Often a set of various activities & various levels of participation
- Teachers can participate with their class (on their own decision or with the support of a school)



### **8.3.Example 1: "Terre des hommes": water**

*url:* <http://tecfaseed.unige.ch/tdh03/>

- **Stakeholders:** NGO, a few teachers, TECFA (my group)
- **Goal:** Work on issues related to "water"

#### **Main activities:**

1. **Queries (enquêtes) or react to news (réagir à l'actualité)**
2. **Photo and picture albums (+ comment)**
3. **Make a quiz or do a quiz**
4. **Add links (+ comment)**
5. **Enter a glossary item, a quotation or a poem**
6. **Free discussion**

#### **Teacher-teacher activities:**

- **Forums**
- **Scenario definitions (teachers describe good scenarios)**

## **8.4.Example 2: "Educapoles"**

*url:* <http://tecfaseed.unige.ch/educapoles/>

- **Stakeholders: NGO, a few teachers, TECFA (my group)**
- **Goal: Follow and interact with a research expedition to the south pole**

### **Main activities:**

- 1. suggest experiments to relays on the ship (a few pupils)**
- 2. request data**
- 3. ask questions**

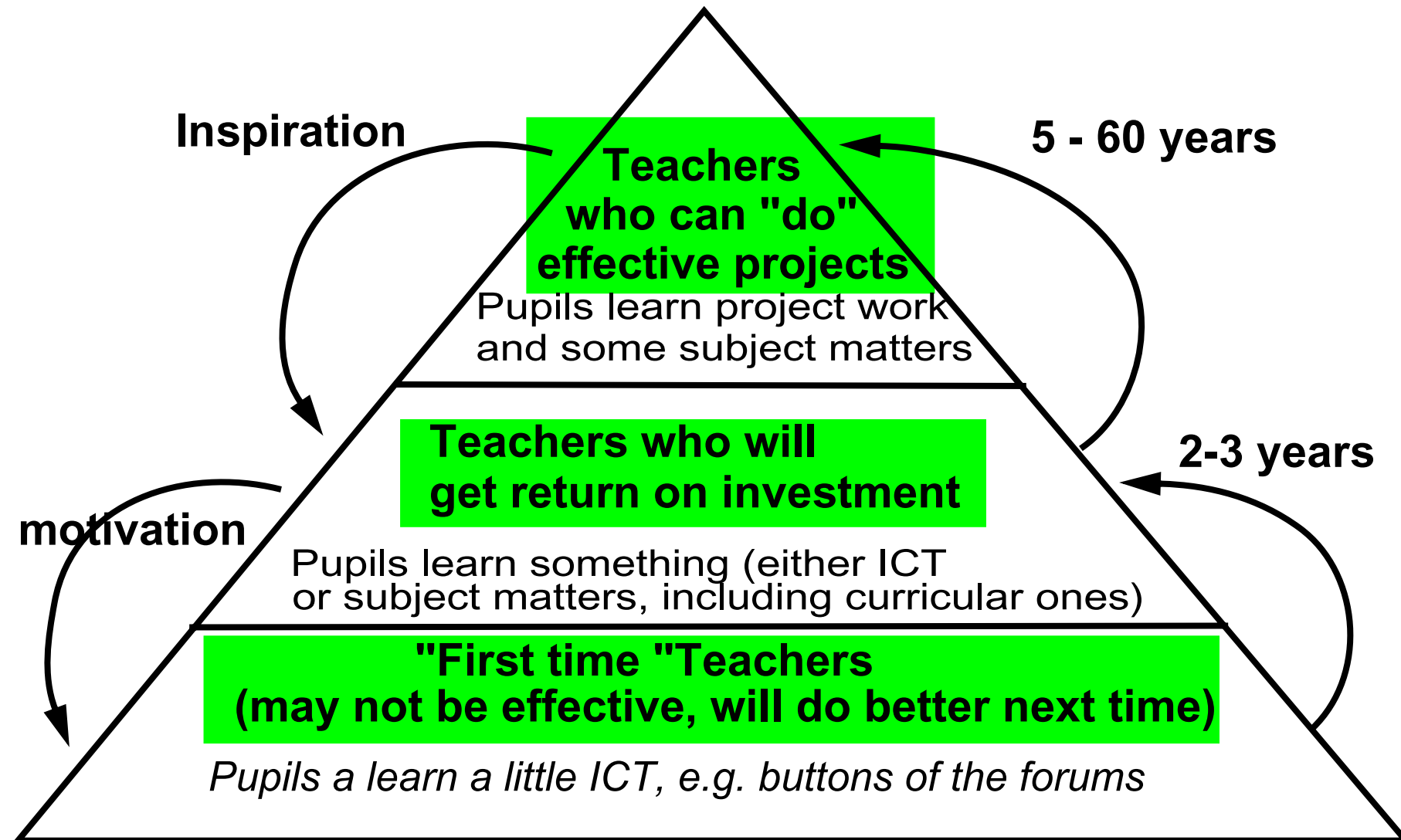
### **Teacher-teacher activities:**

- **Forums**

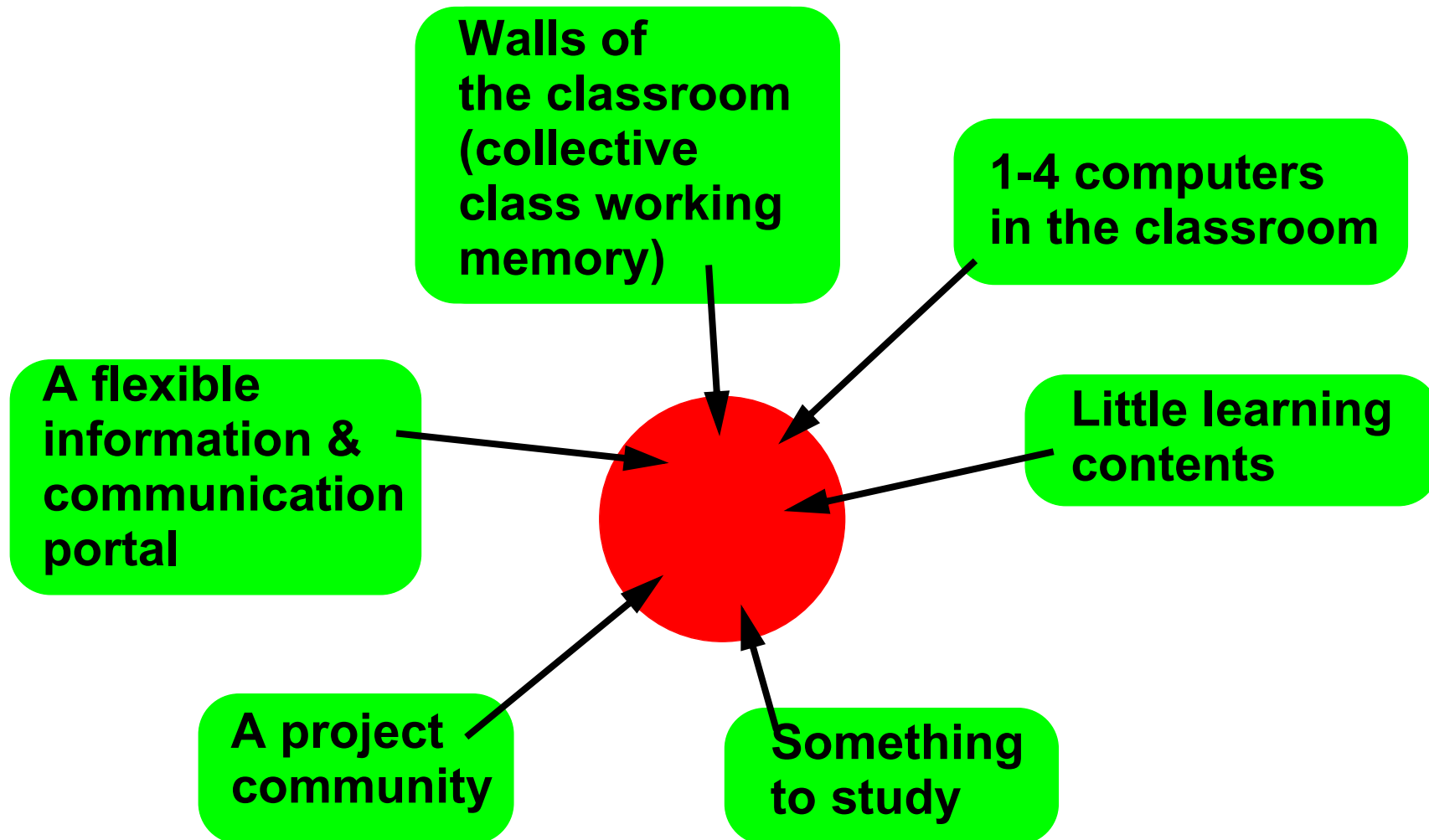
### **Organizer-teacher activities:**

- **news**
- **suggestions**

## 8.5. Internet activities as teacher development



## 8.6 What kind of Infrastructure do we need ?





## **9. Case study 2: Project-based teaching at master level**

- **Life example:** <http://tecfaseed.unige.ch/staf18/>

### **Blended (mixed) format**

- **duration: 6 weeks (a few initial half days in classroom)**
- **2 hours presentation at the end of the course**
- **public: graduate students in educational technology**

### **Project-based**

- **large freedom for choice of subjects within the general theme**
- **scheduling of tasks (exploration, project plan, audits,.... )**
- **some mandatory collective work**
- **each major activity is graded**

### **Each year a different topic**

- **Topic 2002/3: “Exotic hypertexts”**
- **Topic 2004/4: "Visualization and semantic web"**

**(... this format is also used by a few other courses )**

## **9.1. Students activities (task) & associated tools (staf18-2003)**

	<b>Activity</b>	<b>Date</b>	<b>imposed tools (products)</b>
<b>1</b>	<b>Familiarization with subject(s)</b>	21-NOV-2002	<b>links, wiki, blog</b>
<b>2</b>	<b>project ideas, Q&amp;R</b>	29-NOV-2002	<b>classroom</b>
<b>3</b>	<b>Students formulate project ideas</b>	02-DEC-2002	<b>news engine, blog</b>
<b>4</b>	<b>Start project definition</b>	05-DEC-2002	<b>ePBL, blog</b>
<b>5</b>	<b>Finish provisional research plan</b>	06-DEC-2002	<b>ePBL, blog</b>
<b>6</b>	<b>Finish research plan</b>	11-DEC-2002	<b>ePBL, blog</b>
<b>7</b>	<b>Sharing activity</b>	17-DEC-2002	<b>links, blog, annotation</b>
<b>8</b>	<b>audit</b>	20-DEC-2002	<b>ePBL, blog</b>
<b>9</b>	<b>audit</b>	10-JAN-2003	<b>ePBL, blog</b>
<b>10</b>	<b>Finish paper and product</b>	16-JAN-2003	<b>ePBL, blog</b>
<b>11</b>	<b>Presentation of work</b>	16-JAN-2003	<b>classroom</b>

**In ADDITION, every activity can make use of:**

- **shoutbox ( a mini chat )**
- **links (a collection of useful resources)**
- **RSS feeds (news feeds from other portals)**
- **wiki (collaborative hypertext)**
- **various forums (for student-triggered support)**
- **articles + annotations**
- **calendar**
- **various awareness tools (presence, what's new) !**
- **other special purpose tools**

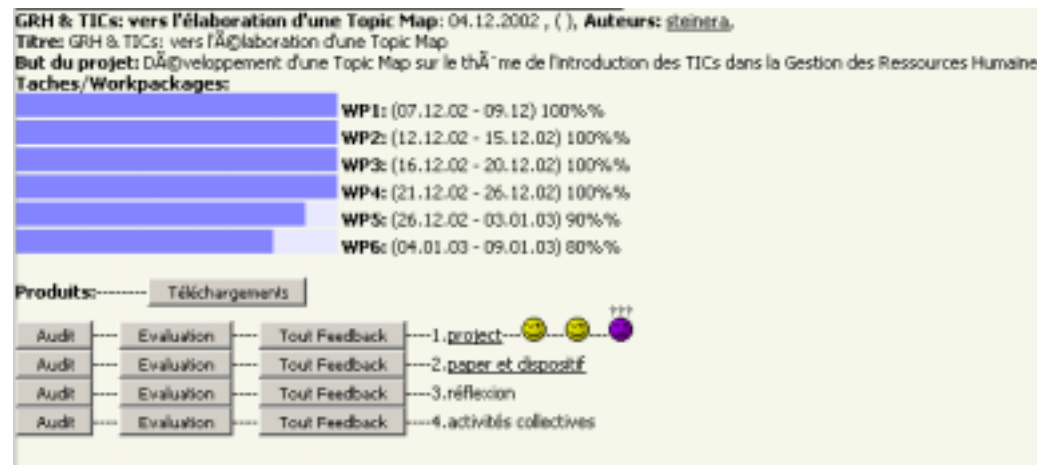
## 9.2. The ePBL tool: 3 core functions

(Ph.D. thesis of Paraskevi Synteta on project-based learning)

### (1) Project Tool

- **File sharing system + formal XML grammar for: main research question, objectives and associated research questions, approach & methods, work packages management**
- **It is a working/thinking/monitoring tool**

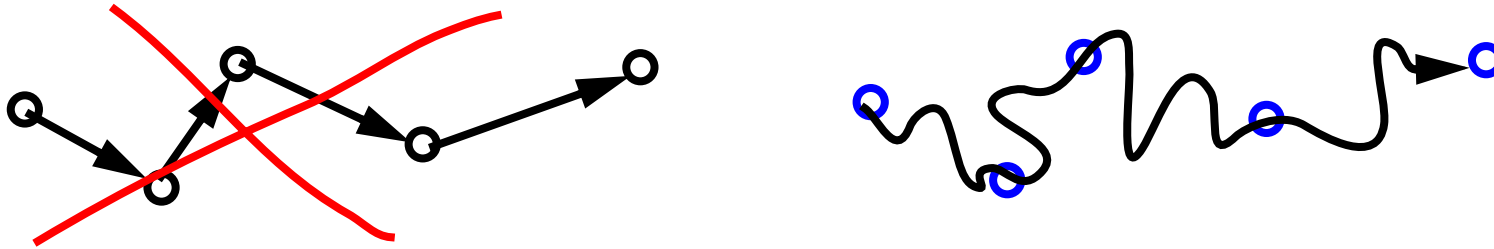
### (2) Audit/Grading Tool: Tied to work packages & student projects



### (3) Paper / virtual book

## 10. Final remarks

### 1. Do not "over-script" (let students "build")



### 2. Activities => tools => productions ("communication as substance")

